

SPLIT-1

Work Order ID 120150-1

120150

Page 1

June-20-14 10:38:39 AM

646.3510

Item ID: 646.3510

B 1 2 0 1 5 0

Accept

N9000040100

Setup Start

NS1

Revision ID:

N / C 3

Stop

NS2

Item Name: Strut

Start Date: 6/04/14

Start Qty: 20.00

~~10~~
20

Cust Item ID:

Required Date: 6/04/14

Req'd Qty: 20.00

~~10~~
20

Customer:

Reference:

Approvals:

Process Plan: u

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

646.3500

N/C 3

105

0.00

105

Waterjet

Memo

0.00

FLOW CNC Waterjet

CUT AS PER DRWG: 646.3500 N/C3

304.063

20

0

DAS
23
9-89

14-06-23

107

QC2- Inspect parts off machine FAI/FAIB

0.00

107

QC

Memo

0.00

Quality Control

20

0

DAS
23
9-89

14-06-23

111

QC8- Inspect parts - second check

0.00

111

QC

Memo

0.00

Quality Control

DAS
27
9-89

27
14/6/23

20

Work Order ID 120150

June-20-14 10:38:39 AM

120150

Page 2

Item ID: 646.3510

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Strut

Start Date: 6/04/14

Start Qty: 20.00

20

Cust Item ID:

Required Date: 6/04/14

Req'd Qty: 20.00

20

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

115

115

Purchasing

Purchasing

Memo

ISSUE PO:

CUT AS PER DRWG: 646.3500 N/C3

0.00

0.00

140

140

Small Fab

Small Fab

Memo

1- Fabricate tube as per dwg

0.00

0.00

10

14-09-08

MAL

150

150

QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

0.00

10

DAS
38
9-89

14-9-8

Work Order ID 120150

June-20-14 10:38:39 AM

120150

Page 3

Item ID: 646.3510

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Strut

Start Date: 6/04/14

Start Qty: 20.00

20

Cust Item ID:

Required Date: 6/04/14

Req'd Qty: 20.00

20

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

Weld per dwg A/R S.S. rod Batch: M125054

0.00

160

Large Fab

Memo

0.00

Large Fab

Weld tube to plate as per dwg. DT9867
Weld end were tube is punch.

10

14-09-09 MAL

170

QC9- Inspect visual per QSI004- Fusion Welds

0.00

170

QC

Memo

0.00

Quality Control

10

SEP 10 2014

DAS
24
9-89

180

QC5- Inspect part completeness to step on W/O

0.00

180

QC

Memo

0.00

Quality Control

10

SEP 10 2014

DAS
24
9-89

Work Order ID 120150

June-20-14 10:38:39 AM

120150

Page 4

Item ID: 646.3510

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Strut

Start Date: 6/04/14

Start Qty: 20.00

20

Cust Item ID:

Required Date: 6/04/14

Req'd Qty: 20.00

20

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

220

0.00

220

SprayPaint

Memo

0.00

Prime as per dwg (see note 3)

Batch: 127401

10

DAS

41

9-89

14-9-11

230

0.00

230

QC

QC14- Inspect Spray Paint

Memo

0.00

10

2

20

14/08/12

240

0.00

240

Packaging

Memo

0.00

***IDENTIFY AS PER APICAL MPP-120 BY STAMPING THE P# AND
REV***

10x

14-9-15

Packaging

DAS

28

9-89

80000101

Work Order ID 120150

120150


Page 5


June-20-14 10:38:39 AM

Item ID: 646.3510 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Strut
 Start Date: 6/04/14 Start Qty: 20.00 *20* Cust Item ID:
 Required Date: 6/04/14 Req'd Qty: 20.00 *20* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250	QC21- Final Inspection - Work Order Release	0.00							
250									
QC	Memo	0.00							
Quality Control									

14/9/14 

 4-15

Picklist Print

Monday, June 09, 2014 1:45:13 PM

Page 1

Work Order ID: 120150

120150

Parent Item: 646.3510

646.3510

Parent Item Name: Strut

Start Date: 6/04/14

Required Date: 6/04/14

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP REV:A 12.10.19 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M304S16GA

Purchased

No

sf

144.8670

①

DAS
23
9-89

M304S16GA

304/316 Sheet .063

**

14-06-20

Location

Loc Qty

Loc Code

MAT020

144.867

M127821

75.567

M128423

1.2

M129192

68.1

129.192

M304TR0.500W.049

Purchased

No

f

277.2805

18

M304TR0 500W 049

304 RD Tube .500 x .049W

**

Location

Loc Qty

Loc Code

MAT017

277.2805

M127937 X 7.083'

201.634

M128833

75.6465

7.083'

14-09-09 MAL

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube <input type="checkbox"/></td> <td style="width:15%;">Crosstube <input type="checkbox"/></td> <td style="width:15%;">Water Jet <input type="checkbox"/></td> <td style="width:15%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other _____ _____ _____
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APICAL

INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO.

04274

SHEET 1 OF 1

DWG NO. 646.3500

REV: NC

PREPARED BY J. SOTO

DATE: 12/02/2013

EFFECT ON DWG

☐ INC. ☒ UNINC.

DWG TITLE: STRUT

APPROVED BY:

ENGR

MFG

QC

EFF. NEXT ORDER

TRANSACTION CODES (TC):

A-ADD
R-REVISEC-CREATE
D-DELETE

REASON: REVISED DELTA NOTE 1 & 2.

SHEET 1, ZONE A1 IS:**IS**

NOTES:

- 1 MATERIAL: AISI 304/ 316 SS SHEET .062 THK
(REF DART SPEC. M304S16GA)
- 2 MATERIAL: AISI 304/316 SS 0.500 OD X 0.049 WALL
(REF DART SPEC. M304TRO.500WO.049)
ENSURE SEAMLESS TUBE IS USED
- 3 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2
COLOR BLACK;
CARDINAL 4860-50 PRETREATMENT PRIMER
PRIME IAW MIL-P-23377J TYPE I CLASS N
4. DEBURR AND BREAK ALL SHARP EDGES
5. WELDS IAW MIL-STD-2219.
TIG WELD WITH FILLER ROD

SHOP COPY
RETURN TO:
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENTWITHOUT NOTICE
WORK ORDER

NO. 120150 MJS

14-06-05

DOCUMENTS EFFECTED:

☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

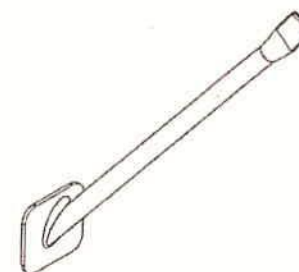
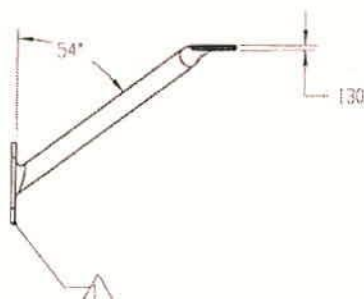
☐ YES ☒ NO

APICAL
INDUSTRIES, INC.

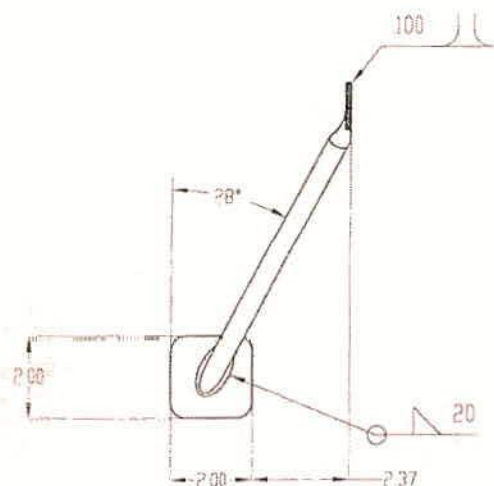
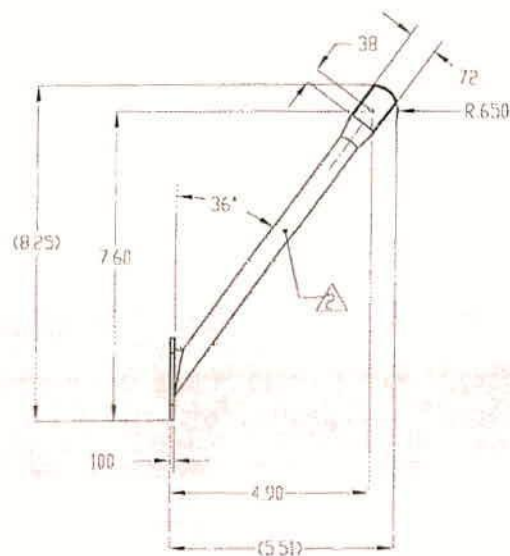
ENGINEERING CHANGE NOTIC. NO.		02440		SHEET 1 OF 1	
DWG NO.	646.3500	REV: NC	PREPARED BY S. HUFF	DATE 06/08/09	EFFECT ON DWG <input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC.
DWG TITLE: STRUT					
APPROVED BY: ENGR	MFG		QC	EFF: CURRENT ORDER AND STOCK	
REASON: REVISED GEOMETRY TO ACCOMMODATE NEW EXISTING AIRCRAFT PROVISIONS					

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

SHEET 2 IS:



646.3512 SHOWN
646.3513 (OPPOSITE)



DOCUMENTS EFFECTED:

☐ MDL ☐ INSTALL INSTRUC ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY
☐ MAJOR ☒ MINOR

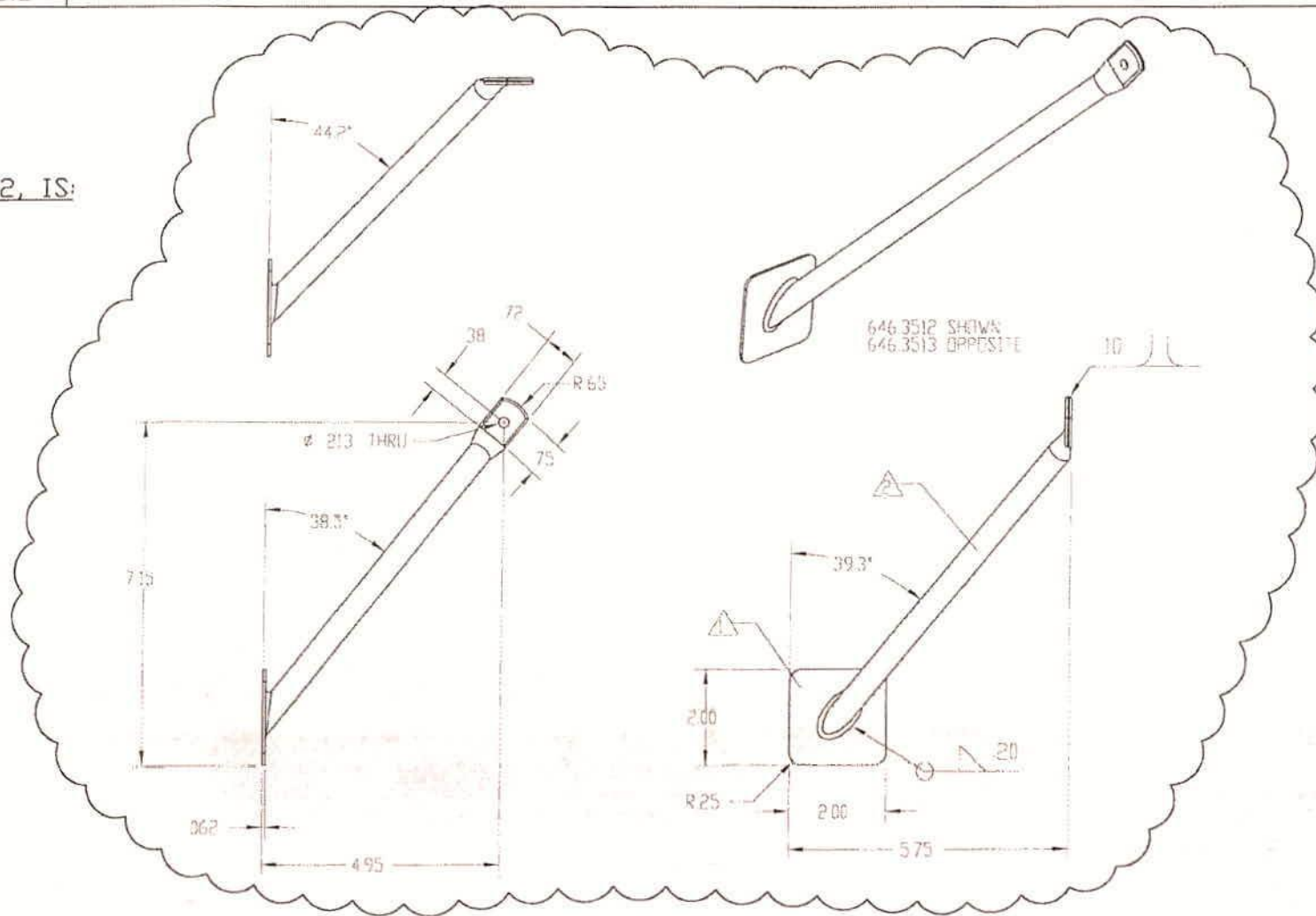
DER REVIEW REQUIRED
☐ YES ☒ NO

APICAL
INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO.		02197		SHEET 1 OF 1	
DWG NO.	646.3500	REV:	N/C	PREPARED BY	S. HUFF
DATE:		01/05/09		EFFECT ON DWG <input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC.	
DWG TITLE: STRUT					
APPROVED BY:	ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF:	NEXT ORDER
REASON: REVISED ANGLE OF 646.3512 & 646.3513 FOR BETTER FITMENT					

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

SHEET 2, IS:



DOCUMENTS EFFECTED:

☐ MDL ☐ INSTALL INSTRU ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY
☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED
☐ YES ☒ NO

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NOTES:

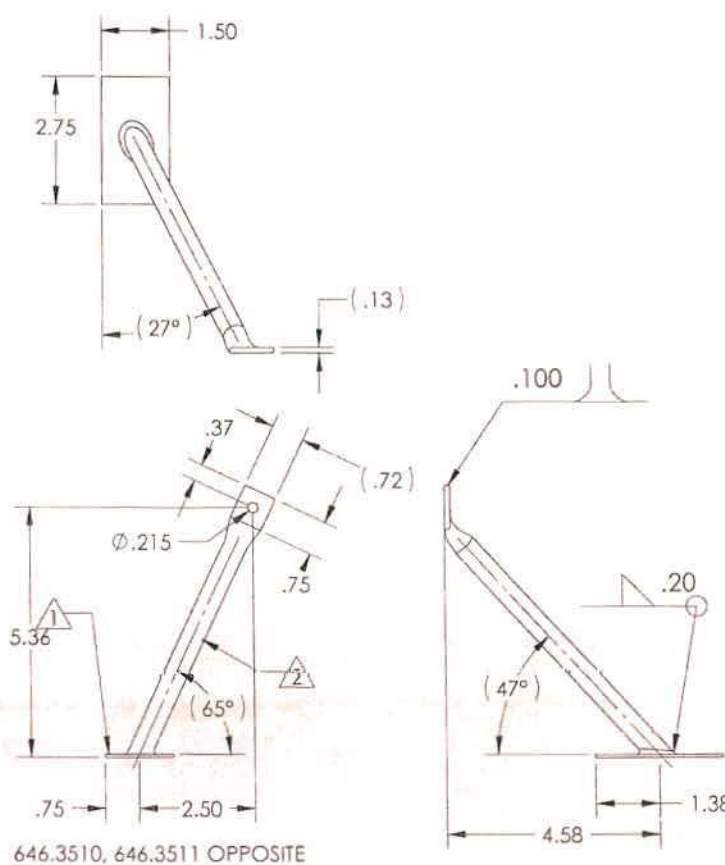
1 MATERIAL: 6061-T6 ALUMINUM IAW AMS-QQ-A-250/11;
.062" THK.

2 MATERIAL: 6061-T6 ALUMINUM IAW AMS-WW-T-700/6
.500" OD; .062" WALL THK

3 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2
COLOR BLACK;
CARDINAL 4860-50 PRETREATMENT PRIMER
PRIME IAW MIL-P-23377J TYPE I CLASS N

4. DEBURR AND BREAK ALL SHARP EDGES

5. WELDS IAW MIL-STD-2219.
TIG WELD WITH FILLER ROD



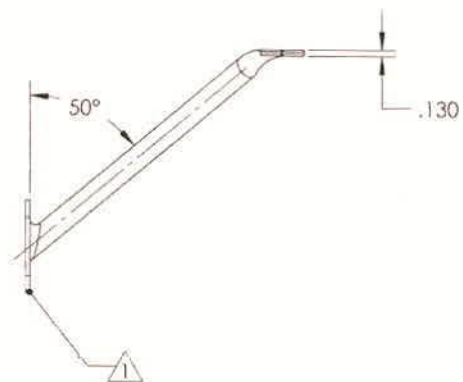
646.3510 SHOWN
646.3511 OPPOSITE

UNINCORPORATED ECN(s)

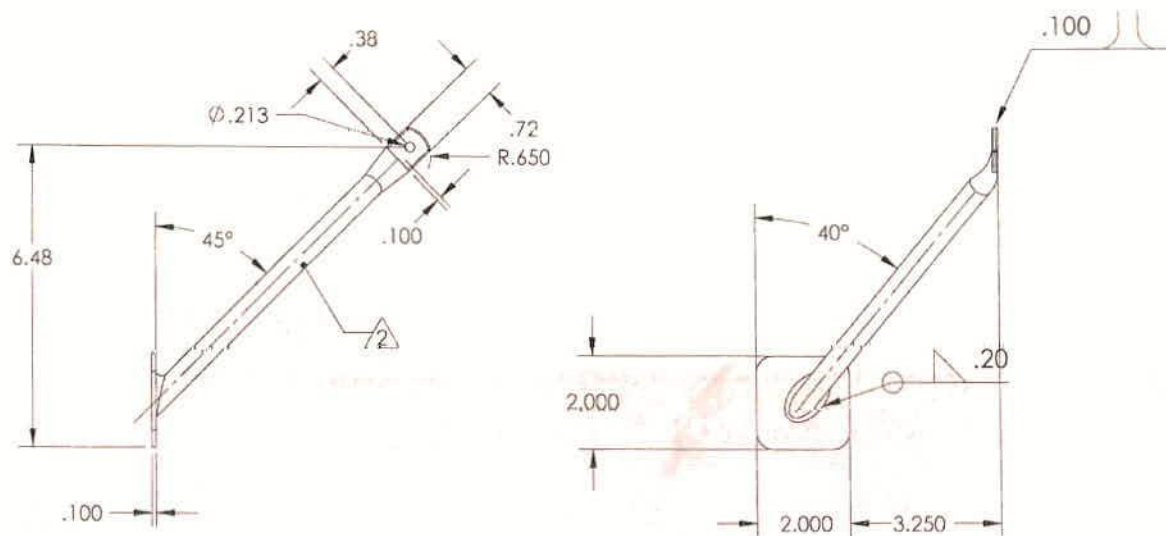
02197, 02440, 04274

		646.3513	STRUT	△△	△△
		646.3512	STRUT	△△	△△
		646.3511	STRUT	△△	△△
		646.3510	STRUT	△△	△△
	FIND #	PART #	DESCRIPTION	MATL	SPEC
QTY	PARTS LIST				
NEXT ASSY (S)	<div> <div> <p> DRAWING DATE: 02-08-88 DRAWN BY: J. ANDERSON CHECKED BY: J. BRADY DESIGNED BY: J. BRADY CONTRACT NO.: </p> </div> <div> <p> ALL DIMENSIONS SPECIFIED UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES DIMENSIONS ARE IN MILLIMETERS DIMENSIONS ARE IN MILLIMETERS DIMENSIONS ARE IN MILLIMETERS DIMENSIONS ARE IN MILLIMETERS </p> </div> </div>				
646.4000	<div> <div> <p> APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300 </p> </div> <div> <p>STRUT</p> </div> </div>				
			<div> <div> <p> SDR SCALE CODE: 07476 SCALE: NONE </p> </div> <div> <p> DIM. NO. 646.3500 </p> </div> </div>		<div> <div> <p> SHEET 1 OF 2 </p> </div> </div>

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646.3512 SHOWN
646.3513 OPPOSITE

[illegible]